

Options for an EA-6B Replacement

AWS 2002

Subject Area Aviation

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AWS AY '02

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2002		2. REPORT TYPE		3. DATES COVERED 00-00-2002 to 00-00-2002	
4. TITLE AND SUBTITLE Options for an EA-6B Replacement				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) United States Marine Corps,School of Advanced Warfighting, Marine Corps University,2076 South Street, Marine Corps Combat Development Command,Quantico,VA,22134-5068				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 8	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Electronic Warfare (EW) is an important dimension of the modern battle space that exists within the invisible realm of the electromagnetic spectrum. Control of the electromagnetic spectrum can deny an enemy the ability to control weapon systems that operate within this realm, as well as deny the ability to communicate with and control forces. The ability to maintain electromagnetic superiority is important enough that the Marine Corps maintains Electronic Warfare as one of its six functions of Marine Aviation. The EA-6B Prowler is the only aircraft the Marine Corps has that is capable of fulfilling this mission. With the Prowler nearing the end of its projected service life and no follow-on platform having been identified, the Marine Corps will lose a valuable aviation capability with the demise of the Prowler.

With the decision by the Air Force to retire the EF-111 *Raven* in 1996, the Prowler now has the distinction of being the only tactical radar jamming aircraft in the United States' inventory. The Air Force gave the entire responsibility of airborne electronic attack (EA) to the Navy and Marine Corps when that decision was made. Having this distinction bestowed on a 1970's vintage aircraft that is no longer in production, the Pentagon's Joint Staff has placed the EA-6B on a list of specialized military resources that are considered to be "low density, high-demand" (LD/HD) assets. This list identifies

assets that must be carefully husbanded because they exist few in numbers but are in extremely high demand (Blazer).

The Department of the Navy currently maintains a total of 122 EA-6Bs. Of these 122 aircraft, the Marine Corps operates approximately 20 Prowlers in four VMAQ (Fixed Wing Tactical Electronic Warfare) squadrons. Current Navy plans call for the EA-6Bs to last until 2015, but recent defense department estimates indicate that the inventory will reach critical shortages as early as 2009 due to aging airframes and attrition (Die is cast for EA-6B Follow-on, pg 2). To address the predicted shortfall of EW assets beyond 2010, the Navy is considering replacing its Prowlers with the EW variant of the *Super Hornet* (F/A-18E/F) known as the EA-18 *Growler* (U.S. GAO). The Marine Corps, however, is reluctant to pursue a non-STOVL (Short Takeoff and Vertical Landing) capable aircraft and has not identified a follow on platform to replace the fleet of aging EA-6Bs.

The Marine Corps is actively looking into alternatives to replace its only airborne electronic attack aircraft; however, this is not a Marine Corps only issue but a multi service problem that spans the Air Force and Navy as well. The difficulty is how to reach a common solution to a joint problem. This problem has taken such a high priority within the congressional realm that a study was funded in the Fiscal Year

2001 Defense Appropriations Act known as the Electronic Attack Analysis of Alternatives (CRS-11). The two year long Navy led study was directed to analyze and recommend how the Department of Defense might best be able to field a follow on Electronic Attack (EA) capability by 2010 (CRS-11).

The Analysis of Alternatives (AOA) identified 27 different EA platforms as possible options (Fleet Seeks Better Jammers). Each platform was analyzed in terms of expense, threat systems it may encounter, technology available, and operational feasibility. The study included manned as well as unmanned alternatives. According to Robert Wall and David Fulghum of *Aviation Week and Space Technology* magazine on the subject of the AOA:

The Defense Department has taken two years to determine what its future electronic attack force should look like through 2030. But the study offers no definitive recommendations despite 2,000 pages of analysis and the examination of 27 air vehicle combinations.(pg 1)

The Air Force examined several different options, including the use of commercial/corporate type aircraft fitted with Electronic Warfare equipment. The Air Force also explored options involving B-52, B-1, F-22, and F-35 (JSF), but each came with a substantial price tag (Die is cast for EA-6B follow-on, pg 1). The Air Force is reluctant to pursue a jamming variant F-35 (JSF) due to budgetary concerns (Fleet Seeks Better

Jammers, pg 41) The Air Force's hesitation to pursue the JSF option was explained by the Navy's Requirement Chief, Vice Adm. Dennis McGuinn, when he stated:

Right now, in talking to the JSF program team, there is no money in the development program to do anything with a two-seat version or advanced electronic attack aircraft. We would not want to add that program cost and risk to the JSF because it has so much importance to all the services and international partners. This is not the right time to pile on another mission. So you lay out the likely [operational dates] for the various services, and you lay out the likely end of service life of the EA-6B; it's not a match.

The Study has solidified the Navy's intent to pursue the EA-18. Prior to the results of the AOA the Navy was already leaning toward the EA-18G (Die is cast for EA-6B follow-on). On Nov. 15, 2001, Boeing successfully completed an initial flight demonstration of its EA-18 with three ALQ-99 tactical jamming pods (Boeing). The pods are the same pods used by the EA-6B to jam radars. This illustrates that the Navy is closer to its goal of finding a future EA platform than either the Air Force or Marine Corps.

Another option considered by the AOA was the production of the EA-6C (Fleet Seeks Better Jammers). This option would entail the production of brand new *Prowlers* with better engines, new radars, and the ALQ-99 tactical jamming system (Fleet Seeks Better Jammers). One advantage of this option would be the relative cost in relation to a "ground up" program as well as

many improvements being made from years of experience flying a legacy aircraft.

It cannot be overstated how important control of the electromagnetic environment is within the modern battle space. With the increase in cost of next generation Marine aircraft and the increase in the lethality of modern Surface to Air Missile (SAMS) systems, the price paid now for having an EW asset will pay dividends to future operations. The ability to employ aircraft in a future conflict involving next generation SAMS will be determined by the capability to achieve electromagnetic superiority. The capability to allow aircraft to operate at lower risk in what would otherwise be a lethal environment must not be lost.

Unless the current mindset shifts away from finding a STOVL EA platform the demise of the EA-6B from the Marine Corps inventory will mean the end of airborne electronic warfare as a function of Marine Corps aviation. This would force the Marine Corps to rely on the Navy or Air Force to provide a war fighting ability that it currently possesses. This would not likely come about as a conscious decision made on the part of the Marine Corps, however, the possibility exists for it to happen by default. It is quite possible that the interests of other services would seal the future of Marine Corps airborne EW causing it to "Die on the vine". Without a follow-on program

identified in the near future to replace the Prowler, the Marine Corps will lose a valuable MAGTF capability.

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